

INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR2004/001565

A. CLASSIFICATION OF SUBJECT MATTER

IPC7 A61C 13/20

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7 A61C 13/00, B22C 7/02

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
PAJ, E-KIPASS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 09-164152 A (UEINA SOGO KENKYUSHO:KK) 24 JUNE 1997 See the whole document	1-20
A	JP 2001-37782 A (ISHIZUKA:KK) 13 FEBRUARY 2001 See the whole document	1-20
A	JP 2000-350738 A (ISHIZUKA:KK) 19 DECEMBER 2000 See figures 1-2	1-20
A	JP 07-236646 A (G C:KK) 12 SEPTEMBER 1995 See claim 1 and figure 1	1-20

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance
 "E" earlier application or patent but published on or after the international filing date
 "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)
 "O" document referring to an oral disclosure, use, exhibition or other means
 "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
 "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
 "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
 "&" document member of the same patent family

Date of the actual completion of the international search
26 NOVEMBER 2004 (26.11.2004)

Date of mailing of the international search report
26 NOVEMBER 2004 (26.11.2004)

Name and mailing address of the ISA/KR



Korean Intellectual Property Office
920 Dunsan-dong, Seo-gu, Daejeon 302-701,
Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

KIM, Seung Soo

Telephone No. 82-42-481-5581



AMENDED CLAIMS

[received by the International Bureau on 26 January 2005 (26.01.2005)]

Statement included

(total 6 pages)]

1. An electric wax chisel comprising:

- 5 a) a main body having a shape of hollow cylinder and including a tank provided inside of the main body, the tank being capable of containing a wax, the main body being electrically connected by an electric wire;
- b) a chisel tip having a hole, the chisel top being installed at one end of the main body; and
- 10 c) a heating member being heated by a power supply;
- d) wherein the main body includes a plurality of chambers, which are detachably attached to each other, a chisel tip connection portion formed in at least one chamber, and a tube member forming a tube passageway and connecting the tank and the
- 15 chisel tip connection portion.

2. An electric wax chisel according to claim 1, wherein the main body comprises: a) a first chamber having a tube member, an exit hole being formed at one end of the tube member and an

20 inlet hole being formed at the other end of the tube member, the exit hole being connected with the tip connection portion; and b) a second chamber having a discharging hole to be connected with the inlet hole of the first chamber, a tank to contain a wax being provided inside thereof.

25 3. An electric wax chisel according to claim 2, wherein the heating member is disposed either at the side of the exit hole of the first chamber, or at the side of the discharging hole in the second chamber.

30 4. An electric wax chisel according to claim 2, wherein a

INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR2004/001565

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
JP 09-164152 A	24.06.97	NONE	
JP 2001-37782 A	13.02.01	NONE	
JP 2000-350738 A	19.12.00	NONE	
JP 07-236646 A	12.09.95	NONE	

filter is disposed selectively at least one of at the exit hole, at the inlet hole, in the tube passageway of the discharging hole, and at a bottom portion of the tank, thereby filtering undesired materials contained in the wax.

5

5. An electric wax chisel according to claim 2, wherein a valve is provided in the tube passageway between the exit hole and the inlet hole in order to selectively open or close the tube passageway by means of the operation of the operating
10 button.

6. An electric wax chisel according to claim 5, wherein the valve includes a solenoid valve electrically connected with the operating button.

15

7. An electric wax chisel according to claim 2, wherein an air control valve is provided either in the main body or a cap in order to control in-flowing of air and prevent molten wax from leaking through an air in-flowing hole.

20

8. An electric wax chisel according to claim 7, wherein the air control valve is opened and closed according to an angle.

9. An electric wax chisel according to claim 2, wherein the
25 main body or a cap is provided with a level sensor for detecting an inclination.

10. An electric wax chisel according to claim 2, wherein a second valve is further provided in at least one of the inlet
30 hole and the discharging hole in order to prevent the molten wax from releasing through the inlet hole or the discharging hole

when the first and second chambers are disassembled.

11. An electric wax chisel according to claim 10, wherein the second valve comprises: a) at least two projections formed in the inner face of the discharging hole along the inner circumference thereof; b) a resilient member disposed at the side of the discharging hole towards of the projections and the inlet holes; and c) an operating member having at one side a flange supported by the resilient member and at the other side an operating pin extending from the center of the flange toward the inlet hole along the axis of the tube member, wherein the operating pin is extended into the inlet hole and one end portion thereof is supported by the filter.

12. An electric wax chisel according to claim 2, wherein the first chamber is provided with a temperature-sensing device for sensing the temperature of the heating member and intermitting the power supply.

13. An electric wax chisel comprising:

a) a main body having a shape of hollow cylinder and a tank provided inside the hollow cylinder, the tank being capable of containing a wax;

b) a chisel tip mounted at one end portion of the main body; and

c) a heating member heated by a power supply, the heating member being electrically connected by an electric wire of the electric wax chisel;

d) wherein a chisel tip connection portion is integrally formed with the main body, the tank is mounted inside the integral main body, a tube member constituting a tube passageway

and connecting the chisel tip connection portion and the tank.

14. An electric wax chisel according to claim 13, wherein the heating member is selectively disposed at least at one position along the length of the tube member.

15. An electric wax chisel according to claim 13, wherein the heating member is disposed in the tank side and chisel tip side respectively of the tube member.

16. An electric wax chisel according to claim 13, wherein a filter for filtering undesired materials contained in the wax is provided at least one of at the tube member, at one side of the exit hole, and at the bottom portion of the tank.

17. An electric wax chisel according to claim 13, wherein the tube member is provided with a valve for selectively opening or closing the tube passageway by operation of the operating button.

18. An electric wax chisel according to claim 17, wherein the valve includes a solenoid valve electrically connected with the operating button.

19. An electric wax chisel according to claim 13, wherein an air control valve is provided either in the main body or a cap in order to control in-flowing of air and prevent molten wax from leaking through an air in-flowing hole.

20. An electric wax chisel according to claim 19, wherein the air control valve is opened and closed according to an angle.

21. An electric wax chisel according to claim 13, wherein the main body or a cap is provided with a level sensor for detecting an inclination.

5

22. An electric wax chisel according to claim 13, wherein a temperature-sensing device is provided near the exit hole in the tube passageway of the tube member in order to sense the temperature and intermit the power supply.

10

23. An electric wax chisel comprising:

a) a main body having a shape of hollow cylinder and a tank provided inside the hollow cylinder, the tank being capable of containing a wax;

15 b) a chisel tip mounted at one end portion of the main body; and

c) a heating member heated by a power supply, the heating member being electrically connected by an electric wire of the electric wax chisel;

20 d) wherein an operating button is provided at the outer face of the main body, a valve to be controlled by the operating button is disposed inwards of the operating button, and a valve is mounted between the chisel tip and the tank such that one side thereof forms a tube passageway together with the chisel
25 tip and the other side thereof forms a tube passageway with the exit hole of the tank, and the valve is operated by operating the operating button.

24. An electric wax chisel according to claim 23, wherein
30 an air control valve is provided either in the main body or a cap in order to control in-flowing of air and prevent molten wax

from leaking through an air in-flowing hole.

25. An electric wax chisel according to claim 24, wherein the air control valve is opened and closed according to an angle.

5

26. An electric wax chisel according to claim 23, wherein the main body or a cap is provided with a level sensor for detecting an inclination.

10

27. An electric wax chisel according to claim 23, wherein the main body is provided with a cap at the other end thereof and the tank is able to be disassembled together with the cap.

15

28. An electric wax chisel according to claim 23, wherein the tank is able to be disassembled from the cap and the valve at one end and the other end thereof respectively, a filter for filtering undesired materials is disposed at the other end, i.e., at the exit hole side, and an wax is contained inside the tank.

20

29. An electric wax chisel according to claim 23, wherein the heating member is disposed at least one of in the chisel tip, in the valve, and at the exit hole side of the tank.

25